MAYEVSKIY, M.M.; URAKOVA, A.P.; ROMANENKO, Ye.A.; MOL'KOV, Yu.N.; FONDAREVA, A.S.; TIMOFEYEVSKAYA, Ye.A.; VYAZOVA, O.I.; MAZAYEVA, V.G.; TALYZINA, V.A.

Antitumor action of the antibiotic chrysomallin (2703). Antibiotiki 9 no.1:33-34 Ja '64. (MIRA 18:3)

1. Laboratoriya eksperimental'noy bioterapii (zav. - chlen-korrespondent AMN SSSR prof. M.M.Mayevskiy) Instituta eksperimental'noy i klinicheskoy onkologii AMN SSSR, Moskva.

MAYEVSKIY, M.M.; ROMANENKO, Ye.A.; URAZOVA, A.P.; MOL'KOV, Yu.N.; TIMOFEYEVSKAYA, Ye.A.; BONDAREVA, A.S.; MAZAYEVA, V.G.; TALYZINA, V.A.; BYAZOVA, O.I.

Effect of the antibiotic olivomycin on transplanted tumors. Antibiotiki 7 no.3:64-67 Mr '62. (MIRA 15:3)

1. Laboratoriya eksperimental'noy bioterapii (zav. - chlen-korrespondent AMN SSSR prof. M.M. Mayevskiy) Instituta eksperimental'noy i klinicheskoy onkologii AMN SSSR.
(ANTIBIOTICS)
(CYTOTOXIC DRUGS)

ROMANENKO, Yakov Grigor'yevich; KAZANNIKOV, Ivan Anisimovich; VOROBEY, P.S., red.; ZUYKOVA, V.I., tekhn. red.

[Organization of the protection of labor on collective farms] Organizatsiia raboty po okhrane truda v kolkhoze. Minsk, Izd-vo Akad. sel'khoz.nauk BSSR, 1960. 99 p. (MIRA 14:12)
(Agriculture--Safety measures)

ROMANENKO, Ye.A.

MAYEVSKIY, M.M., ROMANENKO, Ye.A., BONDAREVA, A.S.

Preliminary results on an evaluation of the anticancer activity of certain cultures of Actinomyces. Antibiotiki 3 no.1:7-9 Ja-F'58 (MIRA 11:5)

1. Laboratoriya eksperimental'noy bioterapii Instituta eksperimental'noy patologii i terapii raka AMN SSSR.

(ACTINOMYCES,
cancer-inhib. strains (Rus))
(NEOPLASMS,
cancer-inhib. strains of Actinomyces (Rus))

MAYEVSKIY, M.M.; AVDEYEVA, I.A.; ROMANENKO, Ye.A.; URAZOVA, A.P.; BONDAREVA, A.S.; TIMOFEYEVSKAYA, Ye.A.; MAZAYEVA, V.G.; GOR'KOVA, N.P.; TAYSHINA, N.M.

Aurantin and its effect on experimental tumors. Antibiotiki 4 no.4:43-46 Jl-Ag '59. (MIRA 12:11)

1. Laboratoriya eksperimental'noy bioterapii (zav. - chlen-korrespondent AMN SSSR prof.M.M.Mayevskiy) Institute eksperimental'noy patologii i terapii raka AMN SSSR.
(ANTINEOPLASTIC AGENTS pharmacol)
(ANTIBIOTICS pharmacol)

ROMANENKO, Ye.A.; BONDAREVA, A.S.

Studies of the effect of bacterial preparations on transplanted animal tumors. Antibiotiki 5 no. 5:58-60 S-O '60. (MIRA 13:10)

1. Laboratoriya eksperimental'noy bioterapii (zav. - chlen-korrespondent AMN SSSR prof. M.M. Mayevskiy) Instituta eksperimental'noy klinicheskoy onkologii AMN SSSR.
(TUMORS) (BACTERIA)

BEKKER, Z.E.; RODIONOVA, Ye.G.; YANGULOVA, I.V.; PETROVA, M.A.; KOROLEVA, V.G.; MAYEVSKIY, M.M.; ROMANENKO, Ye.A.; URAZOVA, A.P.; BONDAREVA, A.S.; MAZAYEVA, V.G.; TIMOSHECHKINA, M.Ye.; MOL'KOV, Yu.N.

Tumor-inhibiting properties of mycelial extracts from some fungi. Antibiotiki 6 no.6:488-492 Je '61. (MIRA 15:1)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut antibiotikov, Institut eksperimental'noy i klinicheskoy onkologii AMN SSSR.
(TUMORS) (FUNGI--PHYSIOLOGICAL EFFECT)

GORBENKO, Yu.A.; ROMANENKO, V.I.

Paper chromatographic study of the formation of volatile acids by micro-organisms of the genera Achromobacter, Pseudomonas, and Chromobacterium. Mikrobiologiia 28 no.6:870-873 N-D '59. (MIRA 13:4)

1. Kafedra mikrobiologii Moskovskogo gosudarstvennogo universiteta im. M.V. Lomonosova.
(ACHROMOBACTER chem.)
(PSEUDOMONAS chem.)
(CHROMOBACTERIUM chem.)

ROMANENKO, V.I.

Use of radioautography for the quantitative determination of methane-oxidizing bacteria. Mikrobiologiia 30 no.2:335-336 Mr-Ap '61. (MIRA 14:6)

1. Institut biologii vodokhranilishch AN SSSR "Borok".
(BACTERIA) (RADIOBIOLOGY)

SUD'INA, Ye.G. [Sud'ina, O.H.]; ROMANENKO, Ye.I.

Dynamics of the pigment content and chlorophyllase activity of fruit. Ukr.bot.zhur. 18 no.4:3-12 '61. (MIRA 14:8)

1. Institut botaniki AN USSR, otdel biokhimii rasteniy.
(Fruit--Ripening) (Chlorophyll) (Carotene)

MENZHERITSKIY, A.I.; OSIPOV, A.V.; YEFREMOV, M.D.; KRUKOVSKIY, Ye.V.; SHLUGER, N.A.; REPSHIL', A.P.; MITSKEVICH, V.M.; MIKIRTUCHEVA, Z.V.; POLONSKIY, V.V.; OBOTOVA, M.N.; SEMENOVSKIY, A.A.; GARASEVICH, G.I.; VAYNBERG, Ye.I.; DOMNICH, A.M.; LEVCHENKO, V.L.; RAFAL'SON, V.D.; ROMANENKO, Ye.I.; SHPINER, Ye.I.; TEKLIN, V.G.

Innovations. Bum. i der. prom. no.2:58 Ap-Je '65. (MIRA 18:6)

KAZANSKIY, A.S.; ROMANENKO, Ye.S.

Effect of an open slit on the size of contact stresses during the impression of a punch. Fiz. mekh. svois., dav. i razr. gor. porod. no.2:26-29 '63. (MIRA 17:1)

ROMANENKO, YE. V.

46-4-5/17

AUTHOR: Romanenko, Ye. V.

TITLE: Miniature Piezo-electric Ultrasound Detectors (Miniatyurnyye p'yezoelektricheskiye priyemniki ul'trazvuka)

PERIODICAL: Akusticheskiy Zhurnal, 1957, Vol.III, Nr 4, pp.342-347 (USSR)

ABSTRACT: The construction, the method of preparation and the method of calibration of miniature piezoelectric ultrasound detectors with a sensitive barium titanate element are described. The maximum dimension of the sensitive element of the detector is about 0.2 mm. The departure from flatness of the frequency characteristic for a bandwidth of 1 - 10 Mc/s is about 30%. The sensitivity is about 0.004-0.007 microwatt/bar. The directional diagram is circular in the plane perpendicular to the axis of the holder of the detector. The construction of the detector is shown schematically in Fig.1. The sensitive element,(1),is in the form of a spherical layer of barium titanate 0.05 mm thick, deposited on a platinum sphere (2) placed at the end of the wire (3) which has a diameter of 0.05 mm. The platinum sphere serves as the inner electrode and the wire as the connection to it. The wire is kept inside the glass capillary (4). The capillary is an extension of the glass tube (5), which serves

Card 1/3

Miniature Piezoelectric Ultrasound Detectors.

as the holder. On the inner side of the tube, the capillary and the ceramic layer, a silver layer (6) is deposited. The main feature of this detector is that the piezoelectric element is prepared, not separately, but is deposited directly on the inner electrode. Platinum was chosen for this electrode because it can withstand the temperature of fusion of barium titanate and because it does not oxidise at that temperature nor does it react with barium titanate. In addition, platinum has a relatively small resistivity, which is important with very thin wires. The overall picture of the detector is shown in Fig.2 and a photograph of the platinum ball and a part of the capillary is shown in Fig.3. The polarisation of the ceramic layer is carried out in the field of 20 kV/cm. N.A. Royu and Yu.N.Moskovenko are thanked for help with the experiments. There are 9 figures and 6 references, of which 4 are Russian, 1 German and 1 English.

Card 2/3

46-4-5/17

Miniature Piezoelectric Ultrasound Detectors.

ASSOCIATION: Acoustical Institute of the Academy of Sciences of the USSR, Moscow (Akusticheskiy institut AN SSSR, Moscow)

SUBMITTED: January 20, 1957.

AVAILABLE: Library of Congress.

Card 3/3 1. Piezoelectric ultrasound 2. Detectors-Miniaturization
3. Detectors-Construction 4. Detectors-Operation

SOV/120-58-5-23/32

AUTHORS: Golyamina, I. P. and Romanenko, Ye. V.

TITLE: An Arrangement for Determining the Elastic Constants of Solids (Ustanovka dlya opredeleniya uprugikh postoyannykh tverdykh tel)

PERIODICAL: Pribory i tekhnika eksperimenta, 1958, Nr 5, pp 90-94 (USSR)

ABSTRACT: The principle of this method is quite simply to determine the characteristic elastic vibration frequencies of a sample of the material under investigation. In the arrangement described the sample is in the form of a cylinder 45 mm in length and 5 mm in diameter. It is held in a specially constructed clamp which enables a known, adjustable stress to be applied. The vibrations are applied by a 'transmitter' at one end of the sample and detected by a 'receiver' at the other end. (For this purpose the piezoelectric effect serves as a converter between electric and mechanical vibrations). There are two modes of operation: either the frequency may be held fixed and the stress to which the sample

Card 1/4

An Arrangement for Determining the Elastic Constants of Solids

is subject may be steadily increased; alternatively, the frequency of the input signal may be steadily increased. In either case the output signal will exhibit a series of well defined resonances corresponding to coincidence between the input frequency and one of the harmonics for mechanical vibration of the sample. This enables the characteristic vibration frequencies to be determined to within 0.1%, and from this knowledge and the equations of motion for the system the elastic constants can be found. In the case where Young's modulus and Poisson's coefficient are to be determined the equation of motion is:

$$(x - 1)^2\varphi(ha) - (\beta x - 1)\left[x + \varphi(\kappa a)\right] = 0 \quad , \qquad (2)$$

where $h = k(\beta x - 1)^1/2$; $\kappa = k(2x - 1)^1/2$;

$x = (v/v_o)^2(1 + \sigma)$; $v = \omega/k$; $v_o = \sqrt{E/\rho}$;

$\varphi(y) = yJ_o(y)/J_1(y)$; $\beta = (1 - 2\sigma)/(1 - \sigma)$; $\omega = 2\pi f$;

a is the radius of the cylindrical sample, 2.5 mm in this

An Arrangement for Determining the Elastic Constants of Solids

instance; E is Young's modulus; σ is Poisson's coefficient; f is the mechanical vibration frequency; J_0 , J_1 are zero and first order Bessel functions. The method yields Young's modulus to within 2% and Poisson's coefficient within 3%. Its application to torsional and bulk moduli is also discussed. The attraction of the method lies in its speed and simplicity, rather than accuracy. It has been used to determine E and σ for steel, aluminium and a number of industrial alloys. Acknowledgments are made to N. A. Roy for his useful advice on designing the equipment,

An Arrangement for Determining the Elastic Constants of Solids

L. I. Ganeva for her assistance in constructing the test equipment and carrying out the measurements and to V. K. Chulkova for her assistance in evaluating the results. The paper contains 3 figures, 2 tables and 5 references; 3 of the references are Soviet, 1 English, 1 German.

ASSOCIATION: Akusticheskiy institut AN SSSR (Acoustics Institute of the Academy of Sciences, USSR)

SUBMITTED: December 10, 1957.

ROMANENKO, Ye. V.

46-4-2-16/20

AUTHORS: Naugol'nykh, K.A. and Romanenko, Ye.V.

TITLE: On the Problem of Propagation of Finite-amplitude Waves in a Liquid (K voprosu o rasprostranenii voln konechnoy amplitudy v zhidkosti)

PERIODICAL: Akusticheskiy Zhurnal, 1958, Vol IV, Nr 2, pp. 200-202 (USSR)

ABSTRACT: Several recent papers (Refs 1-5) reported increase in the absorption coefficient of sound in a liquid with increase of the acoustic intensity. The present paper gives an approximate calculation of absorption of a divergent wave and compares these calculations with experiment. The calculations were made for the region $Re > 1$, where $Re = p/2\pi\nu b$, where p = pressure amplitude, ν = frequency and b is a function of viscosity. Experiments showed that the wave-form at a certain distance from the generator may be represented by Fig 1. It is assumed that in propagation of the wave in the region where the measurements were made the segment AC and the slope of the wave-front were practically unaltered and only the amplitude BD decreased. Measurements were made on tap water using a pulse method at 1 Mc/s with pulse repetition frequency of 50 c/s and pulse duration 20-40 μsec. Peak intensities radiated were 300 W/cm^2. A barium titanate generator and a small

Card 1/2

On the Problem of Propagation of Finite-Amplitude Waves in a Liquid

piezo-electric receiver were used. Measurements were made at a distance of 10-40 cm from the receiver at pressure amplitudes (at a distance of 10 cm from the generator) of 0.5-30 atm. When the intensity at the generator was of the order of tens W/cm^2 the signal which was practically sinusoidal at the generator (Fig 3a) assumed a saw-toothed shape at a certain distance (e.g. 80 cm) from the latter. Figs 2 and 4 show theoretically calculated dependences of $\ln(p'/p_0)$ on $\ln(r/r_0)$, where p' = pressure amplitude at a point r and p_0 and r_0 are the corresponding quantities at a reference point (e.g. the generator), and of $\gamma = -(1/p')(dp'/dr)$ on p'. Experimental points in Figs 2 and 4 are shown by circles, and it is clear that satisfactory agreement between experiment and theory was obtained. The authors point out that at the All-Union Acoustical Conference in 1957 V.A. Burov and V.A. Krasil'nikov read a paper which reported similar agreement between theoretical and experimental results on absorption of plane saw-toothed waves. The authors thank N.N. Andreyev and N.A. Roy for advice, and A.S. Gol'nev and Yu. M. Moskovenko for their help in carrying out the experiments. There are 4 figures and 6 references, 4 of which are American and 2 Soviet.

ASSOCIATION: Akusticheskiy institut AN SSSR Moskva (Institute of Acoustics, Academy of Sciences of the USSR, Moscow)

SUBMITTED: December 10, 1957

Card 2/2 1. Waves—Propagation 2. Liquids—Applications

Romanenko, Ye. V.

Excerpts from the Program and Information Circular, reports to be submitted for the Third Intl. Congress on Acoustics, IUPAP, Stuttgart, GFR, 1-8 Sep 1959.

USSR (cont'd)

KUDRYAVTSEV, B. B., and BALYAN, S. A., Laboratory for Molecular Acoustics, Moscow Oblast Institute for Pedagogics - "The relationship between viscosity and velocity of sound in a liquid"

MAKAROV, V. I., and [illegible], S. N., State University of Moscow - "Study of sound dispersion in solid bodies, plates, and shells by means of an optical process in a dark field"

MALYUZHINETS, G. D., Acoustics Institute, USSR Academy of Sciences, Moscow - (1) "The Sommerfeld integrals and curve tasks in cuneate areas"; (2) "Development of curve phenomena presentations"

[illegible], L. O., Leningrad Electrical Engineering Institute im. V. I. Ulyanov-Lenin - "Absorption of ultra-short waves with frequencies of up to 1000 MHz in crystals"

NAUGOL'NYKH, K. A., and ROMANENKO, E. V., Acoustics Institute, USSR Academy of Sciences, Moscow - "The propagation of spherical and cylindrical waves of finite amplitude"

NOZDREV, V. F., Laboratory for Molecular Acoustics, Moscow Oblast Institute for Pedagogics - "Physical bases for the technical application of molecular acoustics of small amplitudes"

NOZDREV, V. F., BELINSKAYA, L. G., and BELINSKIY, B. A. - "Study of supersonic wave absorption in the esters of acetic acid at high frequencies"

NOZDREV, V. F., KAL'YANOV, B. K., and SHIRKEVICH, M. G. - "Studies of supersonic wave absorption in liquids at high temperatures and pressures"

NOZDREV, V. F., KOSHKIN, N. I., and GORBUNOV, M. A. - "Study of the system of liquid-proof bodies by means of ultra-acoustical methods"

NOZDREV, V. F., YAKOVLEV, V. F., PEREPECHKO, Yu. G., and [illegible]VICH, A. A. - "Dispersion of ultrasonic sound in thin gases"

POLYAKOVA, A. L., Acoustics Institute, USSR Academy of Sciences, Moscow - "Absorption of ultimate amplitude sound waves in relaxing media"

RIMSKIY-KORSAKOV, A. V., Acoustics Institute, USSR Academy of Sciences, Moscow - "Statistical properties of broad-casting signals"

ROY, N. A., and FROLOV, D. P., Acoustics Institute, USSR Academy of Sciences, Moscow - *

ROZENBERG, L. D., Acoustics Institute, USSR Academy of Sciences, Moscow - "Studies of the physical processes in industrial applications of supersonic sound"

SAMOYLOVA, I. K., Sechenov Institute of Evolutionary Physiology, USSR Academy of Sciences, Leningrad - "Preceding masking of short tone signals"

SLAVIN, I. I., and ILYASHUK, Yu. M., Laboratory for Combating Noise, Institute for Labor Protection, Leningrad - "The Soviet system of standards for industrial noise and the Soviet Union's experiences with the system"

Hungary

[illegible], D., Szekesfehervar - "Contribution to the theory of sound radiation"

[illegible], J., Budapest - "Ultrasound intensity measurement by compensated calorimeter"

Poland

[illegible], F., OPILSKI, A., and [illegible], S., Chair of Physics, Higher School of Agriculture, Olsztyn - "Concerning a new acoustic method of determining intermediate molecular forces in liquids and liquid mixtures"

Germany (Democratic (Republic)

JACOB, E. P., Institute for Theoretical Physics, University of Rostock - "The significance of sound velocity measurements for the physics of ternary solutions"

* "Generation of sound by spark discharges in water"

Excerpts from the Program and Information Circular, reports to be submitted for the Third Intl. Congress on Acoustics, IUPAP, Stuttgart, GFR, 1-8 Sep 1959.

AUTHOR: Romanenko, Ye.V. SOV/46-5-1-16/24

TITLE: Experimental Investigation of Propagation of Spherical Waves of Finite Amplitude (Eksperimental'noye issledovaniye rasprostraneniya sfericheskikh voln konechnoy amplitudy)

PERIODICAL: Akusticheskiy Zhurnal, 1959, Vol 5, Nr 1, pp 101-105 (USSR)

ABSTRACT: The wave form of finite-amplitude waves is distorted in propagation; the wave initially sinusoidal gradually assumes saw-toothed shape because of increase in the velocity and temperature gradients. Viscosity and thermal conductivity of the medium lower these gradients. The actual degree of distortion of the wave form depends on the ratio of the effect of viscosity and thermal conductivity on one side and non-linear effects on the other. In spherical waves of finite amplitude pressure decreases with distance not only because of absorption but also because of strong divergence of the wave. For this reason non-linear effects in spherical waves should be weaker than in plane waves. The present paper describes the apparatus and results of an experimental investigation of propagation of spherical waves of finite amplitude. These waves were propagated in tap water and their distortion was measured at large distances from the radiator. The

Card 1/4

Experimental Investigation of Propagation of Spherical Waves of Finite Amplitude

apparatus used is shown schematically in Fig 1. Voltage from an oscillator GSS-6 (1 in Fig 1) is transformed in a modulator-amplifier 2 into 1.15 Mc/s sinusoidal pulses of 20-40 μsec duration and 5-50 c/s repetition frequency. These pulses are amplified and passed to a piezo-radiator 3. Waves produced by the radiator are propagated in tap water in a bath 4 and are received by a wide-band receiver 5. The received acoustic signal passes through a matching cathode follower 6, an amplifier 7, and a second matching cathode follower 8. The signal is finally displayed on oscillographs OK-17M and RFT (9 and 10 in Fig 1). The spherical radiator (Fig 2) is made of two hemispheres of ceramic barium titanate welded using glass in a sphere with external diameter of 16 mm and internal diameter of 12 mm. The working frequency of the radiator was 1.15 Mc/s and the maximum pressure produced on its surface was ~26 atm. Experimental investigation of the acoustic field of the radiator showed that it decays as $1/r^2$ (Fig 3). The author used miniature wide-band piezoelectric receivers described earlier (Ref 1) or receivers with a sensitive element in the form of a thin plate of ceramic barium titanate. The latter type of receiver is shown in Fig 4. Sensitivity of receivers with barium titanate plates of 0.3 mm thickness was ~0.2 μV/bar. The frequency characteristics of the

Experimental Investigation of Propagation of Spherical Waves of Finite Amplitude

receivers were determined from the degree of distortion produced on receipt of saw-toothed plane waves. Characteristics found by this method are shown in Fig 5. Curves 1, 2 and 3 represent the characteristics of a miniature piezoelectric receiver and two barium titanate receivers with plates of 0.35 mm and 0.22 mm thickness respectively. It was found that in spherical waves of finite amplitude non-linear effects are indeed smaller than in plane waves. In order to find harmonics in the propagated spherical waves it was necessary to record the wave-form at considerable distances from the radiator. The wave-form of an original sinusoidal spherical wave (Fig 6a) recorded at 167 cm from the source is shown in Fig 6b. The relative intensities of the second and third harmonics due to non-linear effects in spherical waves are shown as functions of distance from the source in Figs 7a and 7b respectively. Experimental results are shown in Fig 7 by means of triangles and crosses and they agree well with theoretical dependences shown by continuous curves. Curves 1 in Fig 7 represent results for 14.2 atm pressure at the source and curves 2 give the results obtained with 26 atm.

Experimental Investigation of Propagation of Spherical Waves of Finite Amplitude

Acknowledgments are made to N.N. Andreyev and N.A. Roy for criticism, A.N. Anan'yeva for supply of the barium titanate sphere and to Yu.M. Moskovenko and A.S. Gol'nev for help in experiments. There are 7 figures, 1 table and 5 Soviet references.

ASSOCIATION: Akusticheskiy institut AN SSSR, Moskva (Acoustics Institute of the Academy of Sciences of the U.S.S.R., Moscow)

SUBMITTED: April 15, 1958

SOV/46-5-2-10/34

AUTHORS: Naugol'nykh, K.A. and Romanenko, Ye.V.

TITLE: On the Dependence of the Gain Coefficient of a Focusing System on the Sound Intensity (O zavisimosti koeffitsiyenta usileniya fokusiruyushchey sistemy ot intensivnosti zvuka)

PERIODICAL: Akusticheskiy zhurnal, 1959, Vol 5, Nr 2, pp 191-195 (USSR)

ABSTRACT: Non-linear propagation effects, which appear as variation of the acoustic wave-form with the distance away from the source, affect the gain coefficient of focusing systems. The wave, initially sinusoidal, becomes saw-teeth shaped. As a result of this acoustic waves are absorbed more strongly and the gain coefficient becomes smaller. The present paper deals theoretically with non-linear effects in vertical and cylindrical concentrators and describes experiments to check the theory. Three focusing radiators were used (nos.1, 2 and 3). Each represented a portion of a sphere (radii 10, 4 and 1.3 cm respectively) and was made of ceramic barium titanate. The working frequencies of the radiators 1, 2 and 3 were 2.2, 0.5 and 1.4 Mc/s respectively. They emitted

Card 1/4

On the Dependence of the Gain Coefficient of a Focusing System on the Sound Intensity

pulses of 0.1 msec duration and 50 c/s repetition frequency. The gain coefficients of these radiators at low emission intensities were measured separately: they were 40, 15 and 32 respectively. The peak pressures at the radiator surfaces were 2.6, 2.5 and 7.0 atm for the radiators nos. 1, 2 and 3 respectively. Miniature piezoelectric wide-band receivers were used to study conditions near and at the foci of these radiators. It was found that the initially sinusoidal waves emitted by the radiator no.1 were already strongly distorted (Fig.3) at distances of 8 cm from the radiator. Such distortions were not observed in waves emitted by the radiators nos.2 and 3. It was also found that non-linear effects had affected only the focusing properties of the radiator no.1, while they were not important in the radiators nos.2 and 3 (although the peak pressures at the no.3 radiator focus reached 200 atm and cavitation occurred with 0.1 msec pulses from this radiator). All these results are in good agreement with the authors' theory and confirm the usefulness of a non-linearity parameter

On the Dependence of the Gain Coefficient of a Focusing System on the Sound Intensity

suggested by them:

$$a = -\frac{1}{\pi} + \frac{2\alpha}{\lambda c_0} F v_0 \left(n(F / r_f) \geq 0 \right.$$

where $\alpha = (\gamma + 1)/2$, $\gamma = 7.15$ for water, λ is the acoustic wavelength, c_0 is the velocity of sound in a quiescent medium, F is the radius of the spherical concentrator, v_0 is the velocity amplitude at the radiator (concentrator) surface, $r_f = \lambda / \pi \sin^2 \alpha_m$, α_m is the angle of aperture of the spherical focusing system (Fig.1).

Acknowledgments are made to N.N. Andreyev who directed this work, to L.D. Rozenberg, V.A. Krasil'nikov and N.A. Roy for their advice, and tc Yu.M. Moskovenko and A.S. Gol'nev for their help in carrying out the experiments.

On the Dependence of the Gain Coefficient of a Focusing System on the Sound Intensity

There are 5 figures and 11 references, of which 8 are Soviet and 3 English.

ASSOCIATION: Akusticheskiy institut AN SSSR, Moskva (Acoustics Institute, Ac. Sc. USSR, Moscow)

SUBMITTED: July 16, 1958

ROMANENKO, Ye.V.

Experimental investigation of acoustical streams in water. Akust. zhur. 6 no.1:92-95 '60. (MIRA 14:5)

1. Akusticheskiy institut AN SSSR, Moskva.
(Underground acoustics)

S/046/60/006/003/009/012
B019/B063

AUTHOR: Romanenko, Ye. V.

TITLE: Distortion of the Shape of Waves of Finite Amplitude During Their Propagation in a Relaxing Medium

PERIODICAL: Akusticheskiy zhurnal, 1960, Vol. 6, No. 3, pp. 374 - 380

TEXT: The present paper describes an experimental study of the distortion of the shape of waves of finite amplitude, which propagate in an $MnSO_4$ solution. The concentration was 0 - 1 mole/liter, the frequency range was 1.08 - 3.4 Mc, and the pressure amplitude at the emitter surface in water was about 10 atm. Fig. 2 shows a block diagram of the experimental arrangement with which the spectral composition of the waves and the phase relations between them were measured. The percentual composition of the second, third, and fourth harmonic at 1.7 Mc as a function of the distance from the emitter is graphically shown in Fig. 3. For four different concentrations of the solution the percentage of the second harmonic at 1.7 Mc as a function of the distance from the emitter is graphically shown in Fig. 4. These measurements were made with a plane emitter. An analogous function of the second harmonic, taken with a spherical emitter for a

Card 1/2

certain solution, is shown in Fig. 5. The phase shifts of the first harmonic with respect to the second harmonic are graphically represented in Fig. 7 as a function of the distance from the emitter at 1.7 and 3.2 Mc. The ratio $\Delta\varphi/\Delta l$ (l - distance from the emitter, $\Delta\varphi$ - phase shift) as a function of the sound frequency is graphically shown in Fig. 8. An analysis of the two last-mentioned graphs shows that the phase shift of the second harmonic with respect to the first harmonic is only half as large as would follow from the linear theory. It is finally noted that there is a qualitative agreement between the results achieved here and those obtained on the strength of A. L. Polyakova's theory. Details of the calculation are briefly described. The author thanks N. N. Andrevev, N. A. Roy, and A. L. Polyakova for their valuable advice, as well as A. S. Gol'nev and Ye. V. Komkov for their assistance in the experiments. There are 8 figures, 2 tables, and 8 references: 6 Soviet and 2 US.

VC

ASSOCIATION: Akusticheskiy institut AN SSSR Moskva
(Institute of Acoustics of the AS USSR, Moscow)

SUBMITTED: May 10, 1960

S/046/60/006/004/019/022
B019/B056

AUTHOR: Romanenko, Ye. V.

TITLE: Saw Tooth Waves in Electrolytes

PERIODICAL: Akusticheskiy zhurnal, 1960, Vol. 6, No. 4, pp. 508 - 509

TEXT: The author investigated the spectral composition of distorted waves as a function of the natural frequency of the oscillation and of the relaxation frequency of the electrolyte. As electrolytes, solutions of the salts $MnSO_4$, $Al_2(SO_4)$, and $CoSO_4$ were chosen, which are characteristic because of the relaxation of the dissociation. Sound pulses having a duration of 100 microseconds and a pulse sequence frequency of 50 cps were radiated into the solution. Because of the nonlinear distortion of the sound waves, saw tooth waves are formed here, which may be recorded by means of a miniature receiver and which were analyzed by means of a harmonic oscillator. The observations were made on an oscillograph. It was found that a strict difference must be made between the case in which the relaxation frequency of the solution agrees neither with the natural frequency nor with a harmonic, and the case in which the relaxation

Saw Tooth Waves in Electrolytes

S/046/60/006/004/019/022
B019/B056

frequency is within the range of the harmonic. In the former case, the amplitudes of the harmonic decrease with increasing number. In the latter case, the decrease of the amplitudes of the harmonic is slowed down at frequencies above the relaxation frequency. The author thanks N. N. Andreyev, A. L. Polyakova, and L. K. Zarembo for their valuable advice, and A. S. Gol'nev and Ye. V. Komkov for their assistance in this work. There are 2 figures and 3 Soviet references.

ASSOCIATION: Akusticheskiy institut AN SSSR, Moskva (Institute of Acoustics of the AS USSR, Moscow)

SUBMITTED: September 12, 1960

Card 2/2

ROMANENKO, Ye.V.

Front width of saw-toothed waves. Akust. zhur. 7 no.1:103 '61. (MIRA 14:4)

1. Akusticheskiy institut AN SSSR, Moskva.
(Sound waves)

PROTASOV, V.R.; ROMANENKO, Ye.V.

Nature of sounds produced by some fishes of the Black Sea. Dokl. AN SSSR 139 no.3:726-728 Jl '61. (MIRA 14:7)

1. Institut morfologii zhivotnykh im. A.N. Severtsova AN SSSR i Akusticheskiy institut AN SSSR. Predstavleno akademikom N.N. Andreyevym.
(Fishes) (Sound productions by animals)

PROTASOV, V.R., kand.biolg.nauk; ROMANENKO, Ye.V.

Sounds of the Black Sea crabs. Priroda 51 no.6:116-117 Je '62.
(MIRA 15:6)

1. Institut morfologii zhivotnykh im. A.N.Severtsova AN SSSR, Moskva (for Protasov). 2. Akusticheskiy institut AN SSSR, Moskva (for Romanenko).

(Crabs) (Sound production by animals)

ROMANENKO, Ye.V.

Echolocation capabilities in the porpoise. Akust.zhur. 10 no.4: 385-396 '64. (MIRA 18:2)

1. Akusticheskiy institut AN SSSR, Moskva.

ROMANENKO, Ye.V.

Obtaining of vitamin P from the wastes of tangerine juice production. Kons. i ov.prom. 19 no.1:19-22 Ja '64. (MIRA 17:2)

1. Batumskiy filial Nauchno-issledovatel'skogo instituta pishchevoy promyshlennosti Gruzinskoy SSR.

ROMANENKO, M.F.; ROMANENKO, Ye.V.

Trilobites of the Suyarykskaya series in the Middle Cambrian of the Gornyy Altai. Mat.po geol.Zap.Sib. no.63:16-29 '62. (MIRA 16:10)

VINKMAN, M.K.; GINTSINGER, A.B.; POSPELOV, A.G.; POLETAYEVA, O.K.; YEGOROVA, L.I.; ROMANENKO, M.F.; FEDYANINA, Ye.S.; ASTASHKIN, V.A.; CHERNYSHEVA, S.V.; ROMANENKO, Ye.V.; ASKARINA, N.A.; BOYARINOV, A.S.; NADLER, Yu.S.; GORELOV, G.F.

Scheme of the stratigraphy of Lower Cambrian and the lower part of Middle Cambrian sediments in the Altai-Sayan fold area. Trudy SNIIGGIMS no.24:23-34 '62. (MIRA 16:10)

ROMANENKO, Ye.V. (Moskva); PROTASOV, V.R. (Moskva)

Sounds of beluga. Priroda 52 no.6:118-120 '63. (MIRA 16:6)
(Sturgeons) (Sound production by animals)

PROTASOV, V.R.; ROMANENKO, Ye.V.

Sounds emitted by some fishes and their importance as signals.
Zool.zhur. 41 no.10:1516-1528 O '62. (MIRA 15:12)

1. Institute of Animal Morphology, and Acoustic Institute, Academy of Sciences of the U.S.S.R., Moscow.
(Fishes) (Sound production by animals)

L 17781-65 Pb-4 AFWL/SSD/ASD(a)-5/BSD/AMD/AFETR/AFTC(b)/APGC(b)/RAEM(a)/RAEM(1)/ESD(gs)/ESD(t)

ACCESSION NR: AP4049292 S/0046/64/010/004/0385/0397

AUTHOR: Romanenko, Ye. V.

TITLE: On the sonar capabilities of dolphins

SOURCE: Akusticheskiy zhurnal, v. 10, no. 4, 1964, 385-397

TOPIC TAGS: animal behavior, sonar, radar, sound ranging

ABSTRACT: The author reviews thoroughly various aspects of sound communication used by porpoises and dolphins, as described for the most part in the American literature. The subjects covered are: 1. Acoustic characteristics of the sounds produced. 2. Proof that dolphins and porpoises are capable of sonar communication. 3. Interference immunity of the sonar system. 4. Mechanism of sound generation and directivity of sound radiation. 5. Binaural effect and frequency dependence of the dolphin's auditory sensitivity. 6. Comparative estimate of radar and sonar capabilities of dolphins, bats,

Card 1/3

and radar equipment. The conclusions are: 1. Dolphins use sonar signals to search for food and to observe obstacles. 2. Their sonar signals have a broad spectrum in the audio and ultrasound ranges. The bulk of the sonar energy is concentrated in the band up to 30 kcs. The spectrum of the sonar signals is determined by the sound radiation mechanism. 3. The dolphin's sound radiation mechanism is connected with the blowing of air through the respiratory tract and a system of air cavities, and is apparently of the gas-jet type. 4. For dolphin experiments, it is necessary to use a tank at least 100 m long and of ample width and depth. It is pointed out that the literature contains no data on the way dolphins receive the radar signals and gauge the range, dimensions, and structure of the reflecting object. Nor are there any published data dealing with the quality of the dolphin sonar system. Orig. art. has: 15 figures and 2 tables.

ASSOCIATION: Akusticheskiy institut AN SSSR, Moscow (Acoustics

L 17781-65
ACCESSION NR: AP4049292

Institute, AN SSSR)

SUBMITTED: 21Jun64 ENCL: 00

SUB CODE: DC, LS NR REF SOV: 007 OTHER: 021

Card 3/3

ROMANENKO, Yu. A.

Mechanical milking of cows in the Altai Mountains. Zhivotnovodstvo 21 no.11:68 N '59 (MIRA 13:3)

1. Zaveduyushchiy sel'skozotdelom Gorno-Altayskogo obkoma Kommunisticheskoy partii Sovetskogo Soyuza.
(Milking machines)

ROMANENKO, Yu.A.; STASEVICH, Ye.F.

How the Gorno-Altai Autonomous Province can increase beef production. Zhivotnovodstvo 21 no.2:13-15 F '59. (MIRA 12:3)

1. Zaveduyushchiy sel'khozotdelom Gorno-Altayskogo obkoma Kommunisticheskoy Partii Sovetskogo Soyuza (for Romanenko). 2. Zamestitel' nachal'nika oblsel'khozupravleniya. (for Stasevich).
(Gorno-Altai Autonomous Province--Beef cattle)

ACC NR: AP6034540 (N) SOURCE CODE: UR/0421/66/000/005/0063/0069

AUTHOR: Dorfman, L. A. (Leningrad); Romanenko, Yu. B. (Leningrad)

ORG: None

TITLE: Flow of a viscous fluid in a cylindrical vessel with a rotating lid

SOURCE: AN SSSR. Izvestiya. Mekhanika zhidkosti i gaza, no. 5, 1966, 63-69

TOPIC TAGS: viscous fluid, motion mechanics, fluid flow

ABSTRACT: The net-point method is used on a digital computer for solving the problem of flow of a viscous fluid in a closed space adjacent to a rotating plane surface. Results of the calculations are tabulated and analyzed for nets of various density. These data show nearly identical solutions for $f=\psi/\omega sr^2$ when $\xi=r/s=0$, 1.376, 1.875 ($R/s=2$, $N_{Re}=\omega s^2/\nu=25$). The calculated values of f are compared with those of $G=v_\theta/\omega r$ (where v_θ is the peripheral component of velocity) when $R/s=2.5$, 3.0 and $N_{Re}=49$, 100. This comparison indicates that the calculation gives accurate results even on comparatively coarse nets (1°, 2°). When N_{Re} is increased past 100, the divergences on these nets may reach high values. The cylindrical casing has a considerable effect on the nature of the flow when R/s is small. When R/s is increased while N_{Re} is held

Card 1/2

ACC NR: AP6034540

constant at 144, the secondary flow nucleus is broken up and a second nucleus appears. At the same time, the angular velocity ω' of the secondary flow in the nuclei increases. When R/s and N_{Re} are increased, the peripheral velocity component v_θ becomes more uneven. A figure is given showing the variation in vorticity $\eta^0=\eta/\omega$ at various N_{Re} for $R/s=1.5$. Vorticity reaches a maximum on the rotating disc at approximately 3/4 of its radius. Orig. art. has: 7 figures, 2 tables, 16 formulas.

SUB CODE: 20/ SUBM DATE: 13Feb66/ ORIG REF: 002/ OTH REF: 002

Card 2/2

ACC NR: AP7000354 (N) SOURCE CODE: UR/0413/66/000/022/0118/0118

INVENTOR: Romanenko, Yu. M.; Gotlib, Ya. L.

ORG: None

TITLE: A capacitance pickup for remote measurements of slush consistency under ice conditions. Class 42, No. 188746.

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 22, 1966, 118

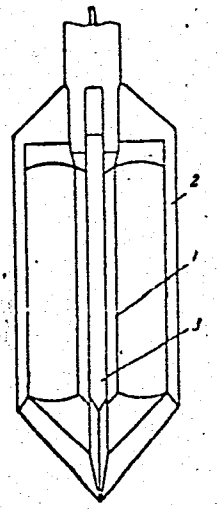
TOPIC TAGS: sea ice, dielectric capacitor, oceanographic instrument

ABSTRACT: This Author's Certificate introduces a capacitance pickup for remote measurements of slush consistency under ice conditions. Between the capacitor plates is a dielectric with compensating recesses. To improve measurement accuracy when the slush contains nonhomogeneous inclusions, e. g. cracked ice, one of the capacitor plates is made in the form of a rod with flutes for holding the dielectric, while the other plate is made in the form of separate rods (which may be three in number) connected at the ends.

Card 1/2 UDC: 543.257.5:621.317.39

09.30 56 24

ACC NR: AP7000354



1—rod; 2—second plate; 3—dielectric

SUB CODE: 08, 09/ SUBM DATE: 09Dec64

Card 2/2

MOROZOV, V.I.; VORONICHEV, N.M.; NAUDIN, Yu.V.; GARMAZA, V.A.; MEDVEDEV, G.I.; KAMENETSKIY, I.M.; IZOKH, V.V.; BARASHKOV, V.D.; EMPARAPULO, V.Kh.; RAZEVSKIY, N.P.; PHASHKOV, Yu.M.; GRISHIN, V.P.; SMYSLOV, I.I.; ROMANENKO, Yu.M.; SAKHAROV, B.B.

Innovations. Avtom. i prib. no.2:61-62 Ap-Je '65. (MIRA 18:7)

ROMANENKO, Yu.V.

Using magnetic triggers for regulating a.c. magnets. Avtom. i prib. no.2:8-9 Ap-Je '65. (MIRA 18:7)

Romanenko Z.G.

KHODOS, A.M., inzh; ROMANENKO, Z.G., inzh.

Stockings made of highly elastic caprone filaments. Leg. prom. 18 no.4:18-20 Ap '58. (MIRA 11:4)
(Hosiery, Nylon)

ROMANENKOV, I.G.

Effect of moisture factors on creep of glass plastics. Plast.massy no.7:45-48 '63. (MIRA 16:8)
(Creep of plastics) (Glass reinforced plastics)

L 13369-63 EPF(c)/EPR/EWP(j)/BDS/EWT(m) AFFTC/ASD Pr-4/Ps-4/
Pc-4 HM/WW

ACCESSION NR: AP3003510 S/0191/63/000/007/0045/0048

69

AUTHOR: Romanenkov, I. G.

TITLE: Effect of moisture factors on creep of glass-reinforced plastics. 15

SOURCE: Plasticheskiye massy, no. 7, 1963, 45-48

TOPIC TAGS: creep, moisture, glass-reinforced plastic

ABSTRACT: The effect of moisture on the creep of the glass-reinforced plastics and the dependence of creep on their composition has been studied. The after-effect of moistening of glass-reinforced plastics presents an interesting development. The increase of the initial deformation and the deformation rate is observed in the moistened samples. The deformation of these materials is determined in aqueous media by means of the accumulation of polymeric bonding material and the glass-fiber filler. The effect of moisture factors on the deformation properties of the above materials depends on the composition and structure of these materials. the use of bonding materials and the fiber-glass filler subjected to moisture effect result in an intensive development of deformation processes of glass-reinforced plastics. The degree of effect of the moisture factors on the deformation of the glass fiber plastics depends on the magnitude of the applied stress.

Card 1/2

L 13369-63

ACCESSION NR: AP3003310

With an increase of stress, the effect of moisture on these materials increases. Polyester glass fiber plastics show a low resistance to the deformational processes in the water. The initial deformation in water media increases to 180 and 200%, in comparison to the deformation process in the dry condition, and reaches as high as 300% for the materials having a dull finish. The creep rate of the polyester fiber glass plastics increases to 500% under the influence of moisture. Orig. art. has: 7 figures.

ASSOCIATION: none

SUBMITTED: 00 DATE ACQ: 30Jul63 ENCL: 00

SUB CODE: MA NO REF SOV: 003 OTHER: 003

Card 2/2

S/804/62/000/011/002/005

AUTHORS: Panferov, K. V., Candidate of Technical Sciences, Romanenkov, I. G., Engineer.

TITLE: The influence of temperature-humidity and chemical factors on the physico-mechanical properties of fiberglass-reinforced plastics.

SOURCE: Akademiya stroitel'stva i arkhitektury SSSR. Institut stroitel'nykh konstruktsiy. Trudy. no.11. Moscow. 1962. Issledovaniya konstruktivnykh plastmass i stroitel'nykh konstruktsiy na ikh osnove. pp.289-333.

TEXT: The paper provides a review of Soviet and foreign literature and examines the results of new lab investigations of the effect of various T and humidity (H) conditions and chemical media on the strength and strain of various fiberglass-reinforced plastics (FRP), especially those of Soviet manufacture. The objective of this investigation is a more rational utilization of existing FRP's in building construction and the development of new structural FRP's with more stable physico-mechanical properties (PhMP) at various T and H, and in chemically-aggressive media. Having established that at ordinary T the PhMP of FRP's are primarily determined by the directionality, composition, and percent content of the glass filler and also by the type of binder, the literature data are scanned, firstly,

Card 1/7

with respect to high T effects. As a rule, FRP's with phenol binders appear most heat-resistant. Currently produced Soviet FRP's based on polyester binders are not adequately heat-resistant and their PhMP drop noticeably at high T. More heat-resistant polyester FRP's should utilize as their monomers triallylcyanurate, diallylphthalate, and other compounds, and additional heat-resistant admixtures should be introduced that are capable of copolymerization with the polyesters. Epoxide resins can be rendered more heat-resistant by combining them with phenol-formaldehyde, silicon-organic, and other resins. The use of more significant heat-resistance characteristics than the Martens HR index is proposed. The T-test data of various authors are divided into 2 groups: (1) The FRP specimens are heated to a given T, held at that T for a prescribed time, and tested in the heated state; (2) the specimens are held at the prescribed T for a certain time, and are then cooled and tested at normal T. PhMP of FRP's at high T, PhMP of FRP's after heating: These 2 groups are discussed in detail with reference to predominantly Western sources. The second group contains more Soviet references. The data adduced show that a short-term heating of FRP's at relatively low T's leads to an improvement of the initial strength and elastic characteristics. With increasing time and T of heating, the respective strength and elasticity characteristics begin to be impaired. PhMP of FRP's at low T: Four references are cited, covering T down to -50°C. Low T do not appear to affect the PhMP of FRP's

appreciably, except for some improvement with lower T. Effect of high humidity: In general, H impairs the PhMP of FRP's. It is noted that during the initial period of H exposure a strengthening of the material may be observed, especially if the number of layers of glass filler is appreciable. Effective means for the improvement of the H resistance by means of the hydrophobization of the fiberglass with surface-active substances are noted. Other means for improving the H resistance of FRP's are an increase in the impregnational capability of the binders. The present investigation shows that the water-resistance of FRP's depends to a significant degree on the manufacturing process and the content of the binder. Thus an FRP containing 68.7% binder absorbs 3.2% water in 90 days and loses appx. 20% of its tensile and flexural strength, whereas an FRP containing 39.6% binder absorbs 10% water and 48-55% of its tensile and flexural strength, respectively. To improve the H resistance of FRP's it is necessary to add to the binder chemical compounds that are capable of hydrolyzing in the presence of H and to change the concentration of the terminal groups in the adhesive medium. One such compound that is capable, through hydrolysis, to interact with the active groups on the surface of the glass fiber, is the silicon-organic additive МТЭК (MTEK), which is employed in the making of the highly water-resistant glass-reinforced textolite СТ-911-1 (ST-911-1), developed by K. A. Andrianov and A. K. Dobacheva. The effect of chemical media: The literature survey contains numerous Western references and

Card 3/7

Card 3/7

also significant citations of works performed in the GDR. A basic criterion in the evaluation of the resistance of FRP's against the disintegrating action of aggressive chemical media is the chemical stability and the constancy of dimensions and shape. The first of these consists of an invariability of the PhMP as a result of the long-term action of chemically aggressive means of differing concentration. Weight, external appearance and coloring of the specimen are also used as indications of chemical stability. Changes in dimensions observed include such phenomena as warping, swelling up, spalling, etc. Generally speaking, FRP's exhibit elevated anticorrosion properties to the action of both vapors and liquids. Experimental investigations: 25 Soviet and 2 imported batches of structural FRP's of industrial and experimental production were tested for T and H effects. The effects of chemical media were tested on 8 batches of domestic FRP's only. The designations and basic characteristics of the various domestic FRP's are listed in a two-page table. The T tested ranged from -40 to +80°C, the latter to represent the maximum possible T to which building structures could be heated by exposure to the sun. Most of the tests were focused on the high-T end, since it was known from literature data that the strength characteristics of FRP's at sub-freezing T are improved. In the H tests, specimens were soaked in water or in air with a RH of 95% for 24, 72, 240, 480, 960, 2,160, 4,320, and 8,640 hrs and were then tested. Tests for the action of aggressive chemical media comprise the soaking of

Card 4/7

specimens for 6 months in vapors and liquid media of differing concentration with H_2SO_4, HCl, HNO_3, acetic acid, and alkalies. Groups of 3-7 specimens prepared in accordance with All-Union Standard GOST 4649-55 were tested for strength and elastic characteristics in tension. 5-12 specimens of the type prescribed by GOST 4648-56 were tested in bending. All tests were made on the Schopper machine, equipped with special T chamber and H vats. The rate of advance of the test heads was 15-20 mm/min, in bending 20-50 mm/min. In modulus-of-elasticity (ME) tests the rate of increase in load in tension was 80-100 kg/min, in bending 20 kg/min. The deformability criterion was taken to be the ME determined as the ratio of the increase in stress to the increase in strain, since the total deformation of humidified and chemically attacked specimens was too greatly scattered, and developed residual strains too large to be meaningful. The results of tests of FRP's specimens heated for the first time to 80°C are summarized and tabulated. Various problems encountered in the testing of specimens after first-time heating (FTH) to 80° are detailed. It is noted that the strength properties of FRP's with phenol binders decrease more greatly than does the ME. Tests of FRP's specimens after long-term heating are described. Some FRP's and, more especially, Soviet-made FRP's based on polyester resins, lose much of their strength after FTH to 80°. In order to determine to what degree inadequate polymerization of the binders occurring in the manufacturing process might have been responsible for this drop

in strength properties, 7 different FRP's were made into tensile and bending specimens which were held at 80°C for a specified time and were then cooled and tested to failure. The effect of the degree of polymerization was thus identified. Two mutually contradictory processes appear to occur in the heating of FRP's. On the one hand, polymerization and polycondensation of the binders occurs, which improves the PhMP, while, on the other hand, thermal destruction processes and, hence, losses in strength obtain. The optimal heat-treatment T to obtain optimal FRP characteristics varies from material to material. In a number of FRP's, primarily those based on polyester binders, a loss of weight with a concomitant improvement of their strength properties occurs at T from 40 to 100°. H tests on FRP's: The water absorption of various types of FRP's varies within broad limits. Two stages of water absorption (WA) by FRP's are identified; first, a stage of intensive WA attributable to filling of structural macrodefects which impairs the PhMP of the FRP slightly, then a second stage of the gradual penetration of H into the bulk of the material which affords a sharp lowering of the strength and elastic properties of the FRP. The amount of water absorbed during the first stage varies greatly from FRP to FRP, depending on the volume of pores, cavities, and fissures, etc., available therefor. The amount of water absorbed in the second stage depends on the amount of microcapillar conduits, the H sorption of the binder and glass filler, and the development of chemical processes along the

surface of the glass fibers. A more intensive loss in strength and elastic properties of FRP's at ordinary T occurs during the first 150-240 hrs of soaking in an aqueous medium. The rate at which the WA occurs increases with increasing T. The H effect appears to be greater with respect to bending than tension, a fact that is attributed to the weakening of the adhesional bonding between the glass fibers and the adhesive medium. Soaking in an aqueous medium does not affect the external appearance of FRP's. Some slight swelling, not in excess of 1.5-2.5%, occurs. Tests of FRP's in chemical media: Acid vapors do not appear to alter the initial PhMP of the FRP's at room T, whereas liquid chemical media produce a substantial impairment, especially during the first 200 hrs of soaking, after which the rate of impairment is reduced. The losses in strength of various FRP's in various acids are detailed. The losses in PhMP of FRP's as a result of T and H action must be taken into account in the design and calculation of structural elements. Practical design coefficients are tabulated. In summary, FRP's are found to be substantially H-resistant and, therefore, suitable for structural use in humid conditions. There are 19 figures, 12 tables, and 58 references (28 Russian-language Soviet, 1 Russian-language translation of an English-language original, 6 German, 1 Italian, 1 French, 21 English).

ASSOCIATION: None given.

ROMANENKOV, I.G.; ABASHIDZE, G.S.

Effect of the concentration of alkali solutions on the physico-mechanical properties of glass plastics. Plast. massy no.11: 39-41 '64 (MIRA 18:1)

L 14354-65 EPA(s)-2/EWT(m)/EPF(c)/EWP(v)/EPR/EWP(j)/T Pc-4/Pr-4/Ps-4/Pt-10
ACCESSION NR: AP4048210 WW/RM S/0191/64/000/011/0039/0041

AUTHOR: Romanenkov, I. G.; Abashidze, G. S.

TITLE: Effect of the concentration of alkaline solutions on the physico-mechanical properties of fiberglass

SOURCE: Plasticheskiye massy*, no. 11, 1964, 39-41

TOPIC TAGS: fiberglass, fiberglass strength, phenol binder, polyester fiberglass, phenol fiberglass, furyl fiberglass / KAST-V laminate

ABSTRACT: The effect of the alkali concentration on the bending and tensile strength of fiberglass and of polyester, phenol, and furyl glass textolites based on different fillers was investigated by a method described earlier. At normal temperatures, the weight of the samples changed very sharply in 5-15% alkaline solutions. The tensile strength of fiberglass of either alkaline or non-alkaline composition decreased considerably in 5-10% sodium hydroxide. The strength variation of fiberglass and polyester textolites after 240 hours' exposure in alkaline solutions is shown in tabular form. The character of the strength variation of fiberglass depending on alkali concentration is independent of the type of binder and the kind of glass filler. The change in weight of fiberglass samples in

Card 1/2

L 58979-65 EWT(m)/EPA(s)-2/EPF(c)/EPR/EWP(j)/T Pc-4/Pr-4/Ps-4/Pt-7 RM/WW

ACCESSION NR: AP5014693 UR/0191/65/000/006/0044/0047
678.06-419:677.521.019.32

37
36
3

AUTHOR: Romanenkov, I.G.; Machavariani, Z.P.

15

TITLE: Water absorption by fiberglass reinforced plastic

SOURCE: Plasticheskiye massy, no. 6, 1965, 44-47

TOPIC TAGS: glass textolite, fiberglass reinforced plastic, moisture content, water absorption, polymer porosity, diffusion coefficient

ABSTRACT: Water penetrates into fiberglass reinforced plastics (FRP) because of breaks in their structural continuity; the nature of such breaks determines the water sorption mechanism. Some causes of the structural discontinuities of FRP are discussed. The process of water absorption is characterized by a scatter of the experimental data which depends on its duration. Most of the discussion of water absorption is devoted to its diffusional aspects. The diffusion was studied on FRP plates at 18-22C; the maximum duration of the tests was 35,000 hr. Mathematical formulas are derived for the calculation of the diffusion coefficient D. The latter was obtained by the analytical method proposed and by a graphic method, and both sets of values are

Card 1/2

L 58979-65

ACCESSION NR: AP5014693

tabulated. For dense structures of low porosity, the calculated diffusion coefficients are in good agreement with the moisture-penetration indices of the binders constituting the polymer base of the FRP. For example, the diffusion coefficients determined on samples of polyester textolites and castings of polyester resin (PN-1) virtually coincide. However, in the case of FRP of "loose" structure, the determination of the diffusion coefficient is somewhat arbitrary in character; the high porosity causes a high moisture capacity and thus distorts the values of D. Penetration of water due to capillary condensation is also considered. Orig. art. has: 2 figures, 2 tables, and 4 formulas.

ASSOCIATION: none

SUBMITTED: 00 ENCL: 00 SUB CODE: MT

NO REF SOV: 014 OTHER: 004

Card 2/2 dm

L 40770-65 EWP(e)/EPA(s)-2/EWT(m)/EPF(c)/EPR/EWP(j)/T Pc-4/Pr-4/Ps-4/Pt-10
WW/RM

ACCESSION NR: AP5006561 S/0191/65/000/003/0039/0041

AUTHOR: Romanenkov, I. G.; Abashidze, G. S.

TITLE: Effect of acid concentration on the strength of glass-reinforced plastics

SOURCE: Plasticheskiye massy, no. 3, 1965, 39-41

TOPIC TAGS: fiberglass, glass reinforced plastic, polyester, phenolic binder, glass fiber strength, acid treatment

ABSTRACT: In a 2-part study, the authors investigated (1) the effect of 240-hrs. treatment at 18-22C with H_2SO_4 (to 50%) HNO_3 (to 60%), and HCl (to 35%) on the physical and mechanical properties of KAST and KAST-V plastics, based on VFB-1 and BF-3 phenolic binders and T-1 fiberglass and a polyester plastic, and (2) the effect of H_2SO_4 and HNO_3 (1, 5, 10, 25, and 45%) on the strength of glass fibers of alkaline and nonalkaline composition (not identified in the article). The resistance of plastics was measured by the change in sample weight, size and strength, and the resistance of fibers - by loss of strength, using the method described in the authors' earlier papers. 5-10% H_2SO_4 was found to penetrate rapidly into phenolic plastics, weakening adhesion of the binder to the fiber-

Card 1/2

L 40770-65

ACCESSION NR: AP5006561

glass and causing the sample to swell, while 20-40% H_2SO_4 had a destructive effect. The resistance to mineral acids was generally higher in KAST-V phenolic plastics than in KAST phenolic plastics and highest in polyester plastics, the inertness of the binder being a major positive factor in the strength. Orig. art. has: 1 table and 5 figures

ASSOCIATION: None

SUBMITTED: 00 ENCL: 00 SUB CODE: MT

NO REF SOV: 003 OTHER: 002

Card 2/2

L 15039-66 EWT(m)/EWP(j)/T/ETC(m)-6 WW/RM

ACC NR: AP6003949 SOURCE CODE: UR/0374/65/000/005/0135/0141

AUTHOR: Romanenkov, I. G. (Moskva); Machavariani, Z. P. (Moskva)

ORG: none

TITLE: Statictical processing of research data on glass fiber glass reinforced plastics

SOURCE: Mekhanika polimerov, no. 5, 1965, 135-141

TOPIC TAGS: fiberglass, thermoplastic material, reinforced plastic, plastic strength, statistical analysis, atmospheric humidity, temperature dependence

ABSTRACT: The effect of humidity and temperature factors on the strength of glass fiber reinforced plastics has been investigated. Statistical treatment was applied to processing the results obtained. The law of distribution of the ultimate strength of the KAST-V glass fiber reinforced plastics subjected to different humidity and tmeperature conditions was analyzed. Orig. art. has: 4 figures, 5 formulas, and 2 tables. [Based on author's abstract]

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Card 1/1 UDC: 678:539.42

GODILO, P.V., inzh.; ROGOVESHKO, N.V., inzh.; ROMANENKOV, I.G., kand.tekhn. nauk

Technology of production and study of large block foam plastics for the middle layer of panels. Trudy TSNIISK no.24:276-322 '63. (MIRA 17:1)

PANFEROV, K.V.; ROMANENKOV, I.G.

Effect of moisture on the physicochemical properties of glass reinforced plastics. Report No.1: Effect of the duration of keeping glass reinforced plastics in water on their strength. Plast.massy no.4:35-37 '60. (MIRA 13:7)
(Glass reinforced plastics)

PANFEROV, K.V.; ROMANENKOV, I.G.

Effect of moisture on the physicomechanical properties of glass plastics. Report No.2: Effect of an aqueous medium on the elastic modulus of glass plastics. Plast.massy no.11:31-34 '60.
(MIRA 13:12)

(Glass reinforced plastics)

ROMANENKOV, I.G.

Effect of the duration of their storage in water on the anisotropy of the strength and deformation properties of glass plastics. Plast.massy no.3:44-48 '61. (MIRA 14:3)
(Glass reinforced plastics)

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S/191/60/000/011/008/016
B013/B054

15.8000 (2209)

AUTHORS: Panferov, K. V., Romanenkov, I. G.

TITLE: Effect of Moisture on Physicomechanical Properties of Glass-reinforced Plastics. Report No. 2. Effect of Water Medium on the Elasticity Modulus of Glass-reinforced Plastics

PERIODICAL: Plasticheskiye massy, 1960, No. 11, pp. 31-34

TEXT: The authors report on experimental studies of the effect of moisture on the elasticity modulus of glass-reinforced plastics in stretching and bending; the studies were made at the TsNIISK AS i A SSSR (Central Scientific Research Institute of Structural Parts of the Academy of Construction and Architecture USSR). Ten industrial and experimental lots of glass-reinforced plastics of Soviet origin were studied on the basis of various glass fiber fillers and phenol binders. The samples were stored in water up to 960 hours. The experiments yielded the following results: The elasticity modulus was most reduced in glass-reinforced plastics on the basis of phenol formaldehyde binders during the first 240 hours. After longer storage in water and with increasing water absorption, the ratio

Card 1/2

88551

Effect of Moisture on Physicomechanical Properties of Glass-reinforced Plastics. Report No. 2. Effect of Water Medium on the Elasticity Modulus of Glass-reinforced Plastics

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$E_{bend}/E_{stretch}$ was reduced. After 960 hours, the elasticity modulus was reduced as follows: in highly stable, glass-reinforced construction plastics by 2 - 13% in stretching and 3.6 - 45% in bending, in glass-reinforced plastics on the basis of glass mats of alkaline composition with phenol binders (P-21 (R-21), KF-16 (KF-16), phenol alcohols) by 22 - 34% in stretching and 28 - 41% in bending, and in glass-reinforced plastics of the "Glakrezit" type (on the basis of K-6 (K-6) binders, phenol alcohols) by 24 - 32% in stretching and 31 - 35% in bending. Water absorption after 960 hours of storage in water was 0.8 - 2.15% in highly stable glass-reinforced plastics, 2.2 - 12.5% in glass-mat plastics, and 17.5 - 22.1% in the "Glakrezit" type. I. P. Berkovich, A. R. Vittenberg, B. S. L'vov, and Ye. M. Gromanovskiy are mentioned. There are 2 tables and 6 references: 2 Soviet, 1 German, 2 British, and 1 US.

Card 2/2

ROMANENKOV, I.G.

Change in the strength and elastic properties of glass plastics following prolonged in water. Plast.massy no.4:46-49 '62.
(MIRA 15:4)

(Glass reinforced plastics)

PANFEROV, K.V., kand.tekhn.nauk; ROMANENKOV, I.G., inzh.

Effect of temperature on the physical and mechanical properties of glass reinforced plastics. Stroi.mat. 8 no.3:27-29 Mr '62. (MIRA 15:8)

(Glass reinforced plastics—Testing)

S/191/62/000/004/012/017
B110/B138

AUTHOR: Romanenkov, I. G.

TITLE: Variation in strength and elastic properties of glass plastics as a result of prolonged soaking in water

PERIODICAL: Plasticheskiye massy, no. 4, 1962, 46-49

TEXT: Soviet-made glass plastics with different fillers and binding agents were stored in water for a long time (≤ 1 year), and examined according to the method of K. V. Panferov, I. G. Romanenkov (Plast. massy, No. 4 and No. 11 (1960)). While strength was maintained for quite a long time, elasticity dropped continuously. The ultimate tensile strength (UTS) of glass textolite ÁÁCT-B (KAST-V) fell 19.7 % after 40 days, 24.8 % after one year; modulus of elasticity fell 16.1 % after 40 days, and 45.6 % after one year. Humidity has a plasticizing effect on the polymer and weakens the adhesion bonds between glass fiber and glue. A decrease in strength and elasticity was found both in the direction of glass fiber orientation and in the other structural directions. Thus the tensile strength decreased (%):

Card 1/3

Variation in strength and...

	after 40 days	after one year
direction of warp:	12.0	19.6
direction of weft:	18.4	23.8
at angle of 45°:	26.6	46.7

The modulus of elasticity in tension decreased 12.5 and 30.4 % along the warp and 18.5 and 36.0 % at 45°, after 10 days and one year, respectively. Rapid methods of determining the prolonged action of water were checked by heating samples at 94±1°C. Deterioration of mechanical properties was similar to that found in long-time tests, while the rate of strength decrease was higher. At 94°C, strength decreased sharply in the first 1.5-2.0 hrs. Glass felt with phenol binding agents (P-21 (R-21), phenol alcohols) showed a smaller drop in UTS in bending with 2-hr treatment in water at 94°C than after one year in water at normal temperature. In the glass textolites KAST and KaST-B, the decreases were very similar in rapid and long-time tests. In polyester glass plastics on a basis of chopped glass fiber, the decrease in UTS in tension and bending was 15.1 and 32.6 % in one year, and 15.7 and 45.9 % after 2-hr treatment with water at 94°C. The decrease in the UTS of KAST glass textolite was 19.6 % after one year, 22.6 % after 30 test cycles; for KAST-V it was 15.8 and 18.3 %. The physical and mechanical characteristics can be extrapolated in some

Card 2/3

ROMANENKOV, P.V.

Using an electronic computer in transportation planning. Avt. transp. 42 no.11:30-31 N '64. (MIRA 17:12)

1. Nachal'nik vychislitel'nogo tsentra Gosudarstvennogo nauchno-issledovatel'skogo instituta avtomobil'nogo transporta.

SYTNIK, G.; ROMANENKOV, P.; AZIZOV, F.; SABININ, A.

Information. Avt. transp. 41 no.8:55-58 Ag '63.
(MIRA 16:11)

1. Nachal'nik Vychislitel'nogo tsentra Nauchno-issledovatel'skogo instituta avtomobil'nogo transporta (for Romanenkov). 2. Nachal'nik otdela Vychislitel'nogo tsentra Nauchno-issledovatel'skogo instituta avtomobil'nogo transporta (for Azizov). 3. Chlen prezidiuma Federatsii avtomobil'nogo sporta SSSR (for Sabinin).

ROMANENKOVA, A., prepodavatel'

Studying the practice of agricultural innovators. Prof.-tekh. obr. 19 no.3:6-7 Mr '62. (MIRA 15:4)

1. Uchilishche mekhanizatsii sel'skogo khozyaystva No.27, Altayskiy kray.
(Farm mechanization--Study and teaching)

ROMANENKOVA, A., prepodavatel'

Let's have more independence! Prof.-tekh. obr. 19 no.6:14-15 Je '62. (MIRA 15:7)

1. Malakhovskoye uchilishche mekhanizatsii sel'skogo khozyaystva No.27, Altayskiy kray.

(Teaching)

ROMANENKOVA, A., prepodavatel'

Some methodological aspects of machine operators' training.
Prof.-tekh. obr. 18 no.8:14-15 Ag '61. (MIRA 14:9)

1. Malakhovskoye uchilishche mekhanizatsii sel'skogo khozyaystva No.27, Altayskiy kray.
(Farm mechanization--Study and teaching)

ROMANENKOV, I.G., kand.tekhn.nauk; ABASHIDZE, G.S., inzh.

Effect of the concentration of aggressive media on the strength of glass filaments. Stek.i ker. 21 no.12:10 D '64. (MIRA 18:3)

1. TSentral'nyy nauchno-issledovatel'skiy institut stroitel'nykh konstruktsiy.

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All-Union Order of Lenin Academy of Agricultural Sciences imeni V.I. Lenin. All-Union Sci Res Inst of Fertilization, Agricultural Engineering, and Soil Science.

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(Dissertation for the Degree of Candidate in Agricultural Sciences)

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Magnetometric data on the origin of thermomineral waters of Baile-Herculane. Comunicarile AR 11 no.12:1515-1520 D '61.

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